Ministry of Northern Development and Mines

Ontario

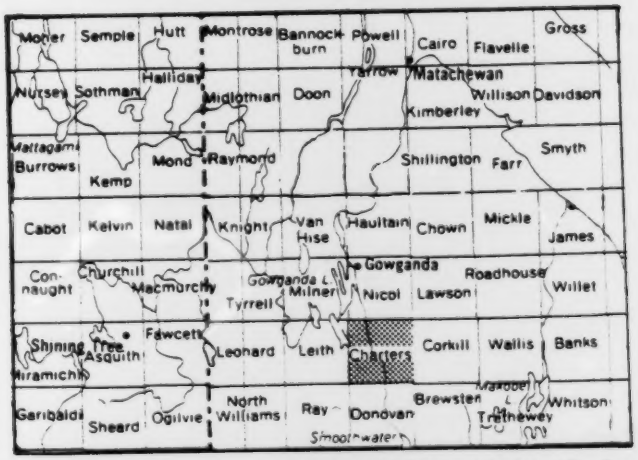
Mines and Minerals Division

ONTARIO GEOLOGICAL SURVEY

GEOLOGICAL DATA INVENTORY FOLIO 496

CHARTERS TOWNSHIP

Compiled by the Staff of
the Resident Geologist's Office
Cobalt



LOCATION MAP Scale: 1:1 013 760 or 1 inch to 16 miles

CANADA ONTARIO Mineral Development Exploration Minerale

This project is part of the five year Canada–Ontario 1985 Mineral Development Agreement (COMDA), a subsidiary agreement to the Economic and Regional Development Agreement (ERDA) signed by the governments of Canada and Ontario.

90-02990

NTS Number 41P/10 & part of 41P/7

Mining Claim Map Number M.212

. This project was funded under the Canada-Ontario Mineral Development Agreement (COMDA)

STATEMENT: This inventory is unedited. Discrepancies may occur for which the Ontario Geological Survey does not assume liability. Information from this source may be quoted if credit is given. Reference to this inventory should be made as follows:

Ontario Geological Survey 1990. Charters Township, Geological Data Inventory Folio 496; compiled by the staff of the Resident Geologist's office, Cobalt.

Original Compilation by: Patricia Anderson, November 4, 1988

Date	Page Revised	Revised by

Date	Page Revised	Revised by

CHARTERS TOWNSHIP

CONVERSION FACTORS FOR MEASUREMENTS IN ONTARIO GEOLOGICAL SURVEY PUBLICATIONS

If the reader wishes to convert imperial units to SI (metric) units or SI units to imperial units the following multipliers should be used:

CONVERSION FROM SI TO IMPERIAL			CONVERSION FROM IMPERIAL TO SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
			LENGTH		
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709 7	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
			AREA		
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
			VOLUME		
1 cm^3	0.061 02	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.308 0	cubic yards	1 cubic yard	0.764 555	m^3
			CAPACITY		
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
			MASS		
1 g	0.035 273 96	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 75	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 62	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 908 8**	t
			CONCENTRATION		
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

1 ounce (troy)/ton (short)	20.0	pennyweights/ton (short)
1 pennyweight/ton (short)	0.05	ounce (troy)/ton (short)

One gram(g) per tonne is equivalent to one part per million (1 ppm).

NOTE–Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries published by The Mining Association of Canada in co-operation with the Coal Association of Canada.

TABLE OF CONTENTS

Data Sources Checklist 1
Metals and Minerals Reference List 2
Mineral Occurrences 3
Type of Work 4
Drill Hole Summary 6
Airborne Geophysical Survey Data 7
Geochemical Survey Data 8
Miscellaneous Data 9
Newspaper Clipping File 10
ODM General Index Search 11
Selected References 16
Notes and Addenda 22

ACCOMPANYING MAPS

Property Location Map - 1 Map
Exploration Data Map - 1 Map
Map Scale 1: 31 680 or 1 inch to ½ mile

DATA SOURCES CHECK LIST

NOTE: The following sources have been searched to compile the data for this area. If no reference data was found the appropriate box is marked 'no'; if reference data was found, the box is marked 'yes'.

All reference data found are included in the following pages. If the box is blank, the data source has not yet been searched. If the box is marked N.A., the source item is Not Applicable to this area and therefore not searched.

	SOURCES OF DATA	Data	Initial
1	Resident Geologist's Office Files	Yes	D.P.A.
2	Assessment Files Research Office, Toronto	No	D.P.A.
3	ODM General Index; 9 Volumes	Yes	D.P.A.
4	Catalogue of Airborne Geophysical Surveys (ODM)	No	D.P.A.
5	ODM Mineral Resources Circulars and OGS Mineral Deposits Circulars	Yes	D.P.A.
6	ODM Industrial Mineral Reports	No	D.P.A.
7	Bibliography of Post Precambrian Theses - Karrow (ODM MP 1)	No	D.P.A.
8	Bibliography of Precambrian Theses - Ginn (ODM MP 2)	No	D.P.A.
9	Newspaper Clippings File	Yes	D.P.A.
10	GSC Index to Publications	Yes	D.P.A.
11	OGS Index to Published Maps and Reports - MP 77 and Supplements to MP 77	Yes	D.P.A.
12	OGS Index Maps	Yes	D.P.A.
13	Source Mineral Deposit Records (O.G.S.)	Yes	D.P.A.
14	Author - Subject Articles File	Yes	D.P.A.
15	Miscellaneous Papers: ODM & OGS	Yes	D.P.A.
16	ODM Geological Circulars: OGS Study Series	Yes	D.P.A.
17	ODM Preliminary Reports: ODM Bulletins	Yes	D.P.A.
18	ODM – OGS Open File Reports	Yes	D.P.A.
19	OGS Northern Ontario Engineering Geology Terrain Studies	Yes	D.P.A.
20	OGS Aggregate Resources Inventory Papers	N.A.	D.P.A.
21	OGS Mineral Potential Maps	No	D.P.A.
22	Theses on File, Cobalt	No	D.P.A.
23	Aerial Photographs on File in Cobalt	Yes	D.P.A.

METALS AND MINERALS REFERENCES LIST

△ anh. . . . . .Anhydrite	△ fu. . . . . .Fuchsite	▲ Ni. . . . . Nickel	△ st . . . . . .Stone
△ ank. . . . . .Ankerite	▲ gn. . . . . Galena	△ Nb . . . . . .Niobium	△ talc. . . . . .Talc
△ anna . . . . . Annabergite	△ gt . . . . . Garnet	△ Pd . . . . . Palladium	△ Te . . . . . Tellurium
△ ap. . . . . .Apatite	△ goe . . . . . .Goethite	△ peat . . . . . .Peat	△ td. . . . . Tetrahedrite
▲ arg . . . . . Argentite	△ Au . . . . . Gold	△ pent . . . . . Pentlandite	△ th. . . . . .Thorite
△ As . . . . . .Arsenic	△ gf . . . . . .Graphite	△ Pt. . . . . .Platinum	△ Th . . . . . .Thorium
△ asp . . . . . .Arsenopyrite	△ gl . . . . . Gravel	▲ py . . . . . .Pyrite	△ thuc . . . . . Thucholite
△ asb . . . . . .Asbestos	△ gyp. . . . . .Gypsum	△ pyl . . . . . Pyrochlore	△ ti . . . . . Titanite
△ ba. . . . . .Barite	△ hem . . . . . Hematite	△ pyrl . . . . . .Pyrolusite	△ Ti. . . . . Titanium
△ be. . . . . .Beryl	△ il . . . . . .Ilmenite	△ po . . . . . .Pyrrhotite	△ tour . . . . . .Tourmaline
△ Bi. . . . . .Bismuth	△ Fe . . . . . .Iron	△ q . . . . . .Quartz	△ trap . . . . . .Trap rock
△ bn . . . . . .Bornite	△ IF. . . . . Iron Formation	△ qcv . . . . .Quartz carbonate vein	△ W. . . . . Tungsten
△ bran . . . . . .Brannerite	△ jas . . . . . Jasper	△ ra. . . . . .Radioactive minerals	△ uran . . . . . Uraninite
△ bruc . . . . . .Brucite	△ kaol . . . . . .Kaolinite (kaolin)	△ RE . . . . . .Rare Earths	△ U . . . . . .Uranium
△ Cd . . . . . Cadmium	△ ky . . . . . Kyanite	△ sd. . . . . Sand	△ verm . . . . . .Vermiculite
△ calc. . . . . Calcite	△ Pb . . . . . Lead	△ sgl . . . . . Sand and gravel	△ Y . . . . . Yttrium
△ carb . . . . . .Carbonate	△ lim . . . . . Limonite	△ ss . . . . . .Sandstone	△ Zn . . . . . .Zinc
△ cel . . . . . .Celestite	△ Li. . . . . Lithium	△ scap . . . . . Scapolite	△ zr. . . . . Zircon
△ cc. . . . . .Chalcocite	△ mgst . . . . . .Magnesite	△ shee . . . . . .Scheelite	
▲ cp. . . . . Chalcopyrite	△ mag . . . . . .Magnetite	△ serp . . . . . Serpentine	
△ ch. . . . . .Chert	△ mc . . . . . Malachite	△ sh. . . . . .Shale	
△ clay . . . . . .Clay	△ Mn . . . . . Manganese	△ sid . . . . . Siderite	
▲ Co . . . . . Cobalt	△ mb . . . . . Marble	△ si . . . . . .Silica	
▲ cob. . . . . Cobaltite	△ mar. . . . . Marcasite	▲ Ag . . . . . .Silver	
△ cb. . . . . .Columbite	△ ma . . . . . .Marl	△ sl . . . . . Slate	
▲ Cu . . . . . .Copper	△ mi . . . . . Mica	△ sm . . . . . .Smaltite	
△ cor . . . . . Corundum	△ ml . . . . . .Millerite	△ sod. . . . . Sodalite	
△ dol . . . . . Dolomite	△ mo . . . . . Molybdenite	△ spec . . . . . Specularite	
△ ep. . . . . Epidote	△ Mo . . . . . .Molybdenum	△ sp. . . . . .Sphalerite	
△ ery . . . . . Erythrite	△ mon . . . . . Monazite	△ spd. . . . . .Spodumene	
△ fel . . . . . .Feldspar	△ ne. . . . . Nephelite (nepheline)	△ staur . . . . . .Staurolite	
△ fl . . . . . .Fluorite (flurospar)	△ nc. . . . . .Niccolite	△ stib. . . . . Stibnite	

Solid triangles indicate metal and mineral occurrences shown on the accompanying maps or listed in Drillhole Summary.

MINERAL OCCURRENCES

Map Ref. Letter	Name(s)	Mineralization	Source Mineral Deposit Record	References in OGS Mineral Deposits Circulars & OGS Industrial Mineral Reports	Additional References and/or Remarks
A.	Garvey Prospect, 1920	Ag, Co, Ni		MRC 10, p.410 NMI 41P/10 Ag8	ODM, 1926, vol. 35, pt. 3, p.56 ODM, 1921, Map 30b ODM, 1962, Map P.159
B.	Haines Prospect, 1926, Andrew Byberg	Co, Cu - major Ag, Ni - minor	T.0121	MRC 10, p.410	ODM, 1926, vol. 35, pt. 3, p.57 ODM, 1921, Map 30b ODM, 1962, Map P.159 OGS, 1971, GR 89, p.42 + Map 2208 OGS, 1973, GR 106, p.74 + Map 2256
C.	Willans, Donovan & Charters Twps., Williams	Ag		NMI 41P/7 Ag4 MRC 10, p.415	Prospectus, Siconer Mines Ltd., Feb. 17, 1961 ODM, 1921, Map 30b ODM, 1965, Map P.301
D.	Welsh, B.M.	Ag - major Co, Ni, Cu- minor	T.0120		OGS, 1971, GR 89, p.43, 44-45 + Map 2208 OGS 1972, GR 106, p.83 + Map 2256

GDIF FORM NO. 1

TYPE OF WORK		Numbers below represent the year in which the work was done; e.g., 68 for 1968.																		
EXPLORATION DATA filed at the RESIDENT GEOLOGIST'S OFFICE COBALT COMPANY/AUTHOR (file number)		GEOLOGICAL	GEOCHEMICAL	TRENCHING, STRIPPING	DRILLING	ASSAY DATA	UNDERGROUND WORK	PROSPECTUS, NOTES, CORRESPONDENCE	AIRBORNE MAGNETOMETER	AIRBORNE ELECTROMAGNETIC	AIRBORNE RADIOMETRIC	GROUND MAGNETOMETER	GROUND ELECTROMAGNETIC	GROUND RADIOMETRIC	INDUCED POLARIZATON	SELF POTENTIAL	RESISTIVITY			
1*	Silver Valley Mines Ltd., Leith & Charters Tps., 1933 - acquired from Pioneer Prospectors Consolidated Mines, Ltd., D.R. O'Gorman and and C.D. Chisolm - re-organized as Silverado-Gowganda Mines Ltd., 1935 - all work done in Leith Tp. - no record of which claims held in Charters																			
2	Garvey, W., 1920			20-?				62												
3*	Christopheson Claims																			
4*	Close Claim																			

GDIF FORM NO. 2

CHARTERS TOWNSHIP

TYPE OF WORK		Numbers below represent the year in which the work was done; e.g., 68 for 1968.																		
EXPLORATION DATA filed at the RESIDENT GEOLOGIST'S OFFICE COBALT COMPANY/AUTHOR (file number)		GEOLOGICAL	GEOCHEMICAL	TRENCHING, STRIPPING	DRILLING	ASSAY DATA	UNDERGROUND WORK	PROSPECTUS, NOTES, CORRESPONDENCE	AIRBORNE MAGNETOMETER	AIRBORNE ELECTROMAGNETIC	AIRBORNE RADIOMETRIC	GROUND MAGNETOMETER	GROUND ELECTROMAGNETIC	GROUND RADIOMETRIC	INDUCED POLARIZATON	SELF POTENTIAL	RESISTIVITY			
5*	Anglo-Canadian Mining Co.																			
6	Welsh, B.M., Charters & Donovan Tp.				61			61												
7	Willing Mining Co. or Willet Mining Co., 1911, Willans Prospect, Charters & Donovan Tps.							19												
8	Shartner, Gustave, Grouse Syndicate, Charters, Leith & Donovan Tps.	72		70 71 77 74 73	72	71 72		71 72 73												
9	Haines						20													

GDIF FORM NO. 2

* No record of work done, but all noted historically. More information may become available.

DRILLHOLE SUMMARY

Map Drilling Location Number	Company Name	Company Drillhole Number	Date Drilled	Bearing Azimuth DEGREES	Initial Dip of Hole DEGREES	Thickness of Overburden FEET	Total Length of Hole FEET	Mineralization Noted in Log	Assay Data Included for
1	Welsh, B.M.	1	1961	000	-60	4	201		
		2	1961	180	-45	6	202		
		3	1961	000	-60	8	204	gn	
		4	1961	000	-60	8	159	cp, gn	
		5	1961	000	-60	4	195		
2	Shartner, Gustave, Grouse Syndicate	S-1	1972	308	-30	20	65	Ag, Co	Ag
		S-2	1972	308	-60	25	80	cp	Ag
		S-3	1972	308	-45	27	87	cp	Ag
		S-4	1972	293	-60	30	102.5	cp, py	Ag
		S-5	1972	325	-10	8	69	cp	Ag
		S-6	1972	325	-30	8	69	cp	Ag
		S-7	1972	305	-30	6	55.5	cp	Ag
		S-14	1972	128	-38	19	106	cp, arg, cob	Ag
3	Shartner, Gustave; Grouse Syndicate	S-8	1972	342	-30	13	97	Co	Ag
		S-9	1972	342	-45	10	88	Ag, gn	Ag
		S-12	1972	335	-30	10	200	cp	Ag
		S-13	1972	342	-30	6	93	cp	Ag
4	Shartner, Gustave; Grouse Syndicate	S-10	1972	323	-45	10	107.5		Ag
		S-11	1972	316	-30	22	105	cp	Ag

GDIF FORM NO. 3

CHARTERS TOWNSHIP

AIRBORNE GEOPHYSICAL SURVEY DATA

No.	By For	Type of Survey	Flight Altitude	Flight Line Direction	Flight Line Spacing
	No data available as of November 4, 1988				

GDIF FORM NO. 4

GEOCHEMICAL SURVEY DATA

Map Sample Site Reference Number	Type of Survey	Analysis For	By	Reference
	No data available as of November 4, 1988			

GDIF FORM NO. 5

MISCELLANEOUS DATA

AGE DATING

Site	Method	Material	Reference	Result
	No data available as of		November 4, 1988	

GDIF FORM NO.6

NEWSPAPER CLIPPINGS FILE

NOTE: A file of newspaper clippings about the companies listed below, who have worked in this area, is maintained in the Regional/Resident Geologist's Office Cobalt.

Silverado-Gowganda Mines Ltd.

Silver Valley Mines Ltd.

GDIF FORM NO. 7

ODM GENERAL INDEX SEARCH

Words searched:

Anglo-Canadian Mining Co.
Byberg, Andrew
Charters Township
Chisolm, C.D.
Christopheson
Close
Durkee Lake
Flanagan Creek
Garvey, W.
Grouse Syndicate
Haines
Haines Creek

Index Volume	Listing:	Report Volume	Part	Page
1	Charters Tp., Tim.			
	Cobalt series	*19	2	174
	Silver	*19	1	52
		*19	2	186
		*22	1	125
2	Charters Tp., Tim.			
	Rocks	*30	3	9
		*35	3	11
	map geological. See map 30b with	*30	3	
	Sand deposits	*35	3	3
	Silver	*30	3	19
		*35	3	22
	mining. See Garvey s.m. Haines s.m.			
	Durkee Lake, Charters tp.			
	Quartz diabase. See map 30b with	*30	3	
	Garvey silver mine, Charters twp.			
	Description	*30	3	42
	Map showing location	*30	3	22
	Haines silver mine, Charters tp.			
	Description	*30	3	42
	Map showing location	*30	3	22
	Lily Lake, Charters tp.			
	Claims on; Pleistocene deposits			
	See map 30b with	*30	3	
	O'Gorman, D.R.			
	of Silverado Mg. Co.	*29	1	109

GDIF FORM NO. 8

ODM GENERAL INDEX SEARCH

Words searched:

Lily Lake
Montreal River
O'Gorman, D.R.
Pioneer Prospectors
Consolidated Mines Ltd.
Shartner, Gustave
Silverado-Gowganda Mines Ltd.
Silver Valley Mines Ltd.
Steele Lake
Welsh, B.M.
Willet Mining Co.
Williams

Index Volume	Listing:	Report Volume	Part	Page
1	O'Gorman, Geo. S.			
	of Silverado Mg. Co.	*29	1	109
	O'Gorman silver mine, Leith tp.			
	Adinole	*30	3	11
		*35	5	13
	Silverado silver mine, Leith Tp.			
	Description	*30	3	43
	Map showing location	*30	3	22
	Operations (1919)	*29	1	109
	Re-opened	*29	3	88
2	Silverado Consolidated Mines Ltd.			
	Capital and date of charter	34	1	56
	Silverado Extension Ltd.			
	Capital and date of charter	*30	1	49
	Change of name	32	1	51
	Steele lake, Charters and Donovan tp.			
	Claims; quartz diabase. See map 30b with	*30	3	
	Willans silver claim, Donovan tp.			
	Map showing location	*30	3	22
3	Charters Tp., Tim.			
	Silver mg. See Silver Valley Mines			

GDIF FORM NO. 8

ODM GENERAL INDEX SEARCH

Words searched:
Willing Mining Co.

Index Volume	Listing:	Report Volume	Part	Page
3	Pioneer Prospectors Consolidated Mines Ltd.			
	Incorporated	*38	1	55
	Silverado Gowganda Mines Ltd.			
	Incorporated	45	1	53
	Operations (1935)	45	1	186
	Silver Valley Mines Ltd.			
	Capital; officers; operations: (1937)	47	1	246
	(1938)	48	1	235
	Incorporated	43	1	40
8	Byberg, Andrew			
	Charters Tp., Timiskaming Dist.			
	mining property, report on	GR 89		42
	Charters, Leith & Corkill Tps., Timiskaming Dist.			
	Geology of the area			
	Report & map 2208 on, 1971 by W.H. McIlwaine	GR 89		
	silver/cobalt	GR 89		42-44
	Charters Tp., Timiskaming Dist.			
	see also Charters, Leith & Corkill Tps., Timiskaming Dist.			
	Geology of the Maple Mountain area	GR 106		
	Silver/cobalt	GR 106		74, 77, 83
		MRC 10		410

GDIF FORM NO. 8

ODM GENERAL INDEX SEARCH

Words searched:

Index Volume	Listing:	Report Volume	Part	Page
8	Durkee Lake Charters Tp., Timiskaming Dist.	GR 89		17
	Flanagan Creek Charters Tp., Timiskaming Dist.	GR 89		16
	Garvey, William Charters Tp., Timiskaming Dist.	GR 89 GR 106		43 77
	Haines Claim Charters Tp., Timiskaming Dist.	GR 89		42
	Haines Creek Charters Tp., Timiskaming Dist.	GR 89		14
	Lily Lake Charters Tp., Timiskaming Dist.	GR 89		13, 20, 22, 34
	O'Gorman, Dan Leith Tp., Timiskaming Dist.	GR 89		1, 29, 31
	O'Gorman Lake Fault Leith & Donovan Tps., Timiskaming Dist.	GR 89 GR 106		18, 28 53, 54
	Pioneer Prospectors Consolidated Mines Incorporated Leith Tp., Timiskaming District	GR 89		31

GDIF FORM NO. 8

ODM GENERAL INDEX SEARCH

Words searched:

Index Volume	Listing:	Report Volume	Part	Page
8	Silver Valley Mines Ltd.			
	Leith Tp., Timiskaming Dist.	GR 89		31, 32
	Silverado Gowganda			
	Leith Tp., Timiskaming Dist.	GR 89		32
	Silverado Mine			
	Leith Tp., Timiskaming Dist.	GR 89		31, 35, 36, 37, 40
	Steele Lake			
	Charters & Donovan Tps., Timiskaming Dist.	GR 89		15, 17, 18, 43
		GR 106		79
	Welsh, B.M.			
	Charters Tp., Timiskaming Dist.	GR 89		43-44, 45
		GR 106		83
	Willing Mining Co. Ltd., The			
	Charters Tp., Timiskaming Dist.	GR 89		43, 45

*Out of Print

SELECTED REFERENCES

Author	Date	Title	Reference	Map Scales and/or Report Pages
		REGIONAL GEOLOGICAL COMPILATION MAPS		
Ginn, R.M.	1964	Timmins-Kirkland Lake Sheet, Cochrane, Sudbury & Temiskaming Districts Ontario, Geological Compilation Series	ODM Map 2046	1:253 440
Card, K.D. et al	1971	Sudbury-Cobalt Sheet, Geological Compilation Series, Algoma, Manitoulin, Nipissing, Parry Sound, Sudbury & Timiskaming Districts, Ontario	ODMNA Map 2188	1:253 440
Pyke, D.R., Ayres, L.D., Innes, D.G.	1973	Timmins-Kirkland Lake Geological Compilation Series, Cochrane, Sudbury & Timiskaming Districts, Ontario	ODM Map 2205	1:253 440
Card, K.D., Lumbers, S.B.	1977	Sudbury-Cobalt, NTS 31L/W, 31M/SW, 41I, 41P/S, Sudbury + AL5 Districts, Ontario, Geological Compilation Series	ODM Map 2361	1:253 440
Easton, R.M.	1986	Geochronology of Ontario, Part 1: Compilation of Data	OFR 5592	179p.
		GEOPHYSICAL MAPS		
GSC	1956	Aeromagnetic Map, Gowganda, Ontario	GSC Map 284G	1:63 360
OGS	1979	Airborne Gamma-Ray Spectrometry Maps and Profiles	MNR Maps 80372-80410	1:250 000
Gupta, V.K., Wadge, D.R.	1980	Bouger Gravity and Generalized Geological Map, Temagami-Englehart Area, NTS 31M/W, 41P/E Timiskaming + 2 AL Districts, Ontario	OGS Map P.2296	1:100 000

SELECTED REFERENCES

Author	Date	Title	Reference	Map Scales and/or Report Pages
		GEOPHYSICAL MAPS		
Gupta, V.K.	1981	Bouger Gravity and Generalized Geological Map of Gogama-Gowganda Area, NTS 41P, Timiskaming & Sudbury Districts, Ontario	OGS Map P.2481	1:100 000
Mansinha, L., Wilkinson, D.A.	1983	Grant No. 109: Interpretation of Gravity Data from New Liskeard, NTS 31M/W, 41P/E, Ontario	OGS OFR 5440	
Symons, D.T.A. Stupavsky, M.	1983	Grant No.143: Analysis of Aeromagnetic Anomalies over Algoman Type Iron Formation	OGS OFR 5476	
Redman, J.D., Strangway, D.W.	1986	Ontario Geoscience Research Grant Program, Grant No.118, Surface Electromagnetic Mapping in Northern Ontario	OGS OFR 5615	
		SURFICIAL, PLEISTOCENE, TERRAIN ENGINEERING		
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Roed, M.A., Hallett, D.R.	1980	NOEGTS Data Base Map, Elk Lake, NTS 41P/NE, Timiskaming District, Ontario	OGS Map 5020	1:100 000
		Charters Township Claim Map	MNR Map Plan No. M.212	1"=40ch.

GDIF FORM NO.9

SELECTED REFERENCES

Author	Date	Title	Reference	Map Scales and/or Report Pages
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		MINERAL POTENTIAL		
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Hunter & Associates Ltd.	1984	Peat and Peatland Evaluation of the New Liskeard Area, NTS 31M/2 + 41P/E, Timiskaming + 2 Other Districts	OGS OFR 5486	3 volumes
Kretschmar, U., Kretschmar, D.	1986	Talc, Magnesite and Asbestos Deposits in the Timmins-Kirkland Lake Area, Timiskaming & Cochrane Districts	OGS Study 28	
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Author	Date	Title	Reference	Map Scales and/or Report Pages
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Collins, W.H.	1909	Preliminary Report on the Gowganda Mining Division, District of Nipissing, Ontario	*GSC Separate Report 1075 *GSC Map 1076	 1:63 360
Collins, W.H.	1914	The Geology of the Gowganda Mining Division	*GSC Memoir 33 *GSC Map 64A	 1:63 360
McIlwaine, W.H.	1969	Geology of Leith, Charters and Corkill Townships, District of Timiskaming, Ontario	ODM OFR 5035	
McIlwaine, W.H.	1969	Charters Township, District of Timiskaming, Ontario	ODM Map P.503	1:15 840
Savage, W.S., Fenwick, K.G.	1962	Gogama Sheet, District of Sudbury and Timiskaming	ODM Map P.151	1:126 720
Savage, W.S., Thomson, R., Fenwick, K.G.	1962	Elk Lake-New Liskeard Sheet, District of Timiskaming, Ontario	ODM Map P.159	1:126 720

SELECTED REFERENCES

Author	Date	Title	Reference	Map Scales and/or Report Pages
		GEOLOGICAL REPORTS AND MAPS		
McIlwaine, W.H.	1971	Geology of Leith, Charters and Corkill Townships, District of Timiskaming, Ontario	ODMNA GR 89	
McIlwaine, W.H.	1971		ODMNA Map 2208	1:31 680
Card, K.D., McIlwaine, W.H.	1973	Geology of the Maple Mountain Area, Timiskaming, Nipissing and Sudbury Districts, Ontario	ODM GR 106	
Card, K.D., McIlwaine, W.H.	1973	Smoothwater Lake, Timiskaming District, Ontario	ODM Map 2256	1:63 360
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Owsiacki, L., Anderson, D.P.	1987	Cobalt Resident Geologist's Area Northeastern Region; in Report of Activities 1987, Regional and Resident Geologists, edited by C.R. Kustra, Ontario Geological Survey	MP138	pp.285-305
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Andrews, A.J.	1986	Silver Vein Deposits: Summary of Recent Research	Canadian Journal of Earth Sciences vol. 23, no.10	pp. 1459-1462
Andrews, A.J., Owsiacki, L., Kerrich, R., Strong, D.F.	1986	The Silver Deposits at Cobalt and Gowganda, Ontario. I: Geology, Petrography and Whole-Rock Geochemistry	Canadian Journal of Earth Sciences, vol. 23, no.10	pp. 1480-1506

GDIF FORM NO.9

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Author	Date	Title	Reference	Map Scales and/or Report Pages
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Thorpe, R.I., Goodz, M.D., Jonasson, I.R., Blenkinsop, J.	1986	Lead-Isotope Study of Mineralization in the Cobalt District, Ontario	Canadian Journal of Earth Sciences, vol. 23, no. 10	pp. 1568-1575

* Out of Print

GDIF FORM NO.9

NOTES AND ADDENDA

The exploration data map shows only the most important minerals found at each site. All the minerals noted are listed in the mineral occurreces or the drill hole data.

On the maps, only the areas for which work has been submitted to the Ministry are shown and thus a company may hold, or have held in the past, more ground than is shown.

No present or past producers.

The township was closed to staking in 1978 due to the Bear Island Indian Caution.

AIR PHOTOS - on File in Cobalt

1"=¼ mile - 1946, 1959
- 1958R - Strip 4721

GDIF FORM NO.10

Ministry of Northern Development and Mines

Ontario

Mines
Miner
Divisi

ONTARIO GEOLOGICAL SURVEY

PROPERTY LOCATION MAP

GEOLOGICAL DATA INVENTORY FOLIO 496

(Map 1 of 2)

CHARTERS TOWNSHIP

Scale 1:31 680

Kilometre 0.5 0 0.5 1 Kilometre

Mile 0.5 0 0.5 1 Mile

Ministry of Northern Development and Mines

Mines and Minerals Division

Ontario

ONTARIO GEOLOGICAL SURVEY

PROPERTY LOCATION MAP

GEOLOGICAL DATA INVENTORY FOLIO 496

(Map 1 of 2)

CHARTERS TOWNSHIP

Scale 1:31 680

Kilometre 0.5 0 0.5 1 Kilometre

Mile 0.5 0 0.5 1 Mile

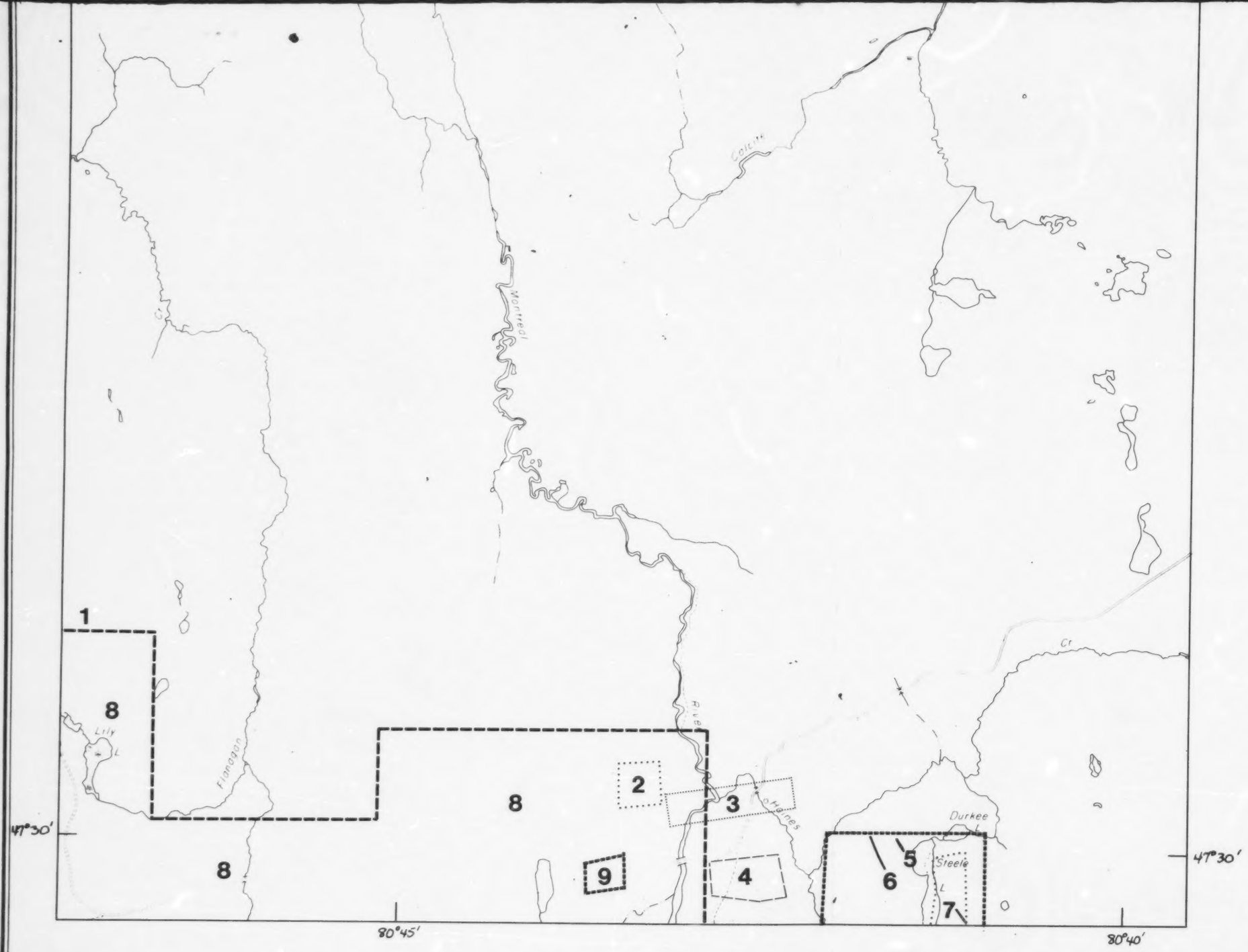
(Map 1 of 2)

CHARTERS TOWNSHIP

Scale 1:31 680

Kilometre 0.5 0 0.5 1 Kilometre

Mile 0.5 0 0.5 1 Mile



EXPLORATION DATA FILE AREAS

- Reference number is always inside work area outlined. See listing in text pages.
- Small area of exploration
- File covers whole township or area

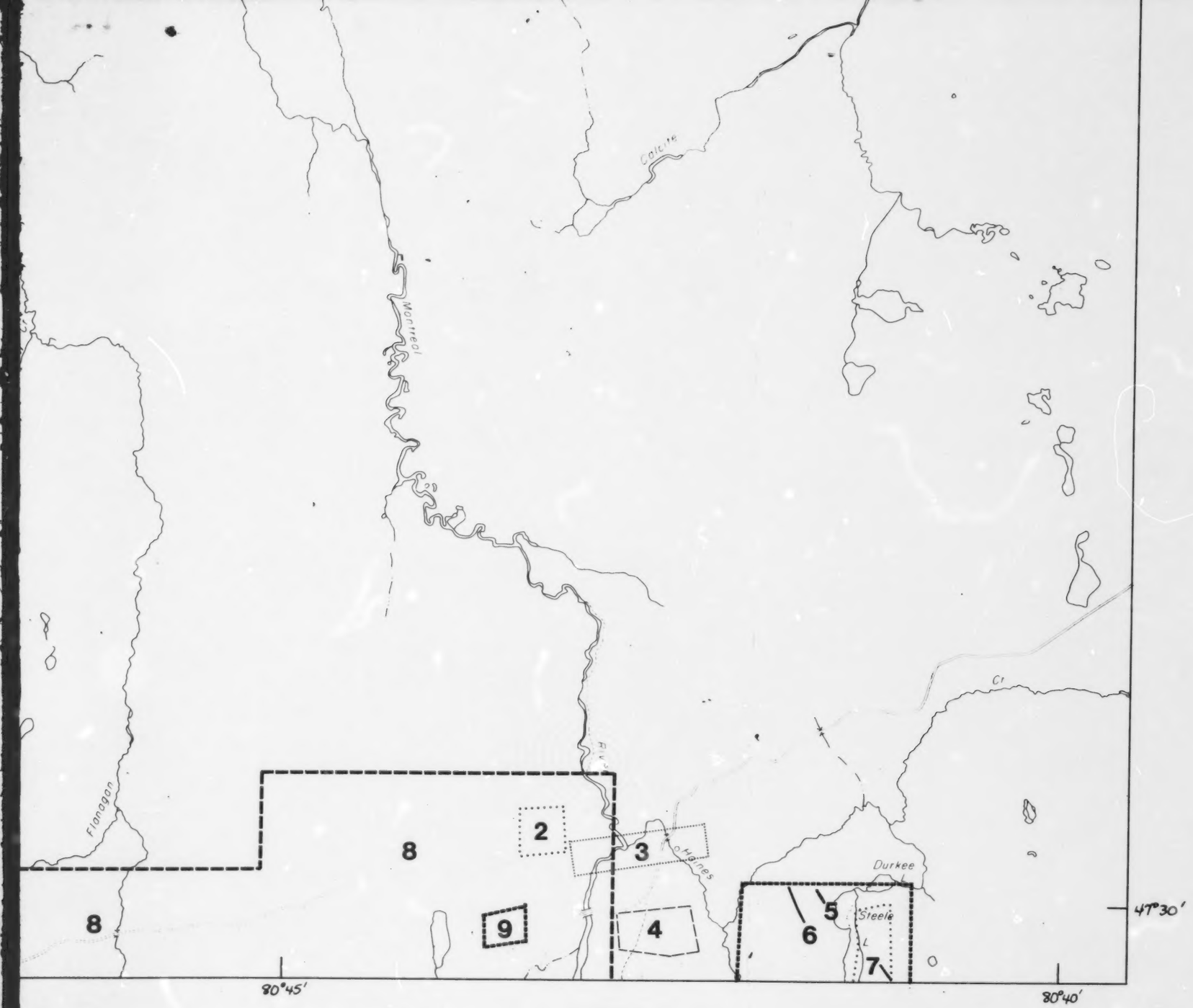
(Map 1 of 2)

CHARTERS TOWNSHIP

Scale 1:31 680

Kilometre 0.5 0 0.5 1 Kilometre

Mile 0.5 0 0.5 1 Mile



EXPLORATION DATA FILE AREAS

- ■ ① ⑥ Reference number is always inside work area outlined. See listing in text pages.
- □ x ④ Small area of exploration
- □ ★ File covers whole township or area

TYPES OF DATA SHOWN ON THIS MAP

GEOCHEMICAL AND GEOCHRONOLOGICAL DATA

- ☐ Geochemical sample site, with reference number
- ☐ Area of geochemical sampling, with reference number
- ☐ Age dating material sampling site, with reference number

GEOPHYSICAL ANOMALIES

- ☐ AM — Airborne magnetic anomaly
- ☐ Airborne electromagnetic anomaly
  Length of anomaly along flight line
- ☐ Airborne electromagnetic anomaly
  Location of anomaly along flight line
- ☐ Airborne electromagnetic anomaly
  Conductor axis: definite, probable, possible
- ☐ ARA — Airborne radiometric anomaly
- ☐ M — Ground magnetic anomaly
- ☐ VL — Ground electromagnetic anomaly
  (VL - Vertical loop; HL - Horizontal loop
  VLF - Very low freq.; Turam; JEM -
  Crone Em - 16)
- ☐ RA — Ground radiometric anomaly
- ☐ IP — Induced polarization anomaly
- ☐ SP — Self potential anomaly
- ☐ AFMAG — Audio-frequency magnetic anomaly
  (total intensity)
- ☐ R — Resistivity anomaly
- ☐ GR — Gravity anomaly

MISCELLANEOUS DATA

- ■ Trenching, pit
- ☐ Rock quarry
- ☐ Adit
- ■ Sand and/or gravel pit

Ministry of Northern Development and Mines

Mines and Minerals Division

Ontario

ONTARIO GEOLOGICAL SURVEY

EXPLORATION DATA MAP

GEOLOGICAL DATA INVENTORY FOLIO 496

(Map 2 of 2)

CHARTERS TOWNSHIP

Scale 1:31 680

Kilometre 0.5 0 0.5 1 Kilometre

Mile 0.5 0 0.5 1 Mile

GEOLOGICAL AND MINING SYMBOLS

TYPES OF DATA SHOWN ON THIS MAP

MINERAL OCCURRENCES

- ■ cp A. — Mineral occurrence at surface, with reference letter
- ■ Au A. 84' — Mineral occurrence with shaft, depth given with reference letter
- □ Ag A. — Mineral occurrence reported but exact location uncertain, with reference letter
- □ cp A. — Mineralized float with reference letter
- □ A. — Mineral occurrence in drillhole, with reference letter, and drillhole number

DRILLHOLES

- □ 2 — Location of single drillhole, with reference number
- ■ 2 — Location of closely spaced group of drillholes, with reference number
- □ ? 2 — Drillhole, exact location uncertain, with reference number

GEOPHYSICAL ANOMALIES

- ☐ AM — Airborne magnetic anomaly
- ☐ Airborne electromagnetic anomaly
  Length of anomaly along flight line
- ☐ Airborne electromagnetic anomaly
  Location of anomaly along flight line
- ☐ Airborne electromagnetic anomaly
  Conductor axis: definite, probable, possible
- ☐ ARA — Airborne radiometric anomaly
- ☐ M — Ground magnetic anomaly
- ☐ VL — Ground electromagnetic anomaly
  (VL - Vertical loop; HL - Horizontal loop
  VLF - Very low freq.; Turam; JEM -
  Crone Em - 16)
- ☐ RA — Ground radiometric anomaly
- ☐ IP — Induced polarization anomaly
- ☐ SP — Self potential anomaly
- ☐ AFMAG — Audio-frequency magnetic anomaly
  (total intensity)
- ☐ R — Resistivity anomaly
- ☐ GR — Gravity anomaly

MISCELLANEOUS DATA

- ■ Trenching, pit
- ☐ Adit
- ☐ Open pit
- ☐ Rock quarry
- ■ Sand and/or gravel pit
- ■ 10 / 10 — Number of trenches or pits in a small area

NOTE: Consult the text that accompanies this map for pertinent lists of data, references, and abbreviations.

(Map 2 of 2)

CHARTERS TOWNSHIP

Scale 1:31 680

Kilometre 0.5 0 0.5 1 Kilometre

Mile 0.5 0 0.5 1 Mile

GEOLOGICAL AND MINING SYMBOLS

TYPES OF DATA SHOWN ON THIS MAP

MINERAL OCCURRENCES

- cp A. — Mineral occurrence at surface, with reference letter
- Au A. 84' — Mineral occurrence with shaft, depth given with reference letter
- Ag A. — Mineral occurrence reported but exact location uncertain, with reference letter
- cp A. — Mineralized float with reference letter
- A. — Mineral occurrence in drillhole, with reference letter, and drillhole number

DRILLHOLES

- ●² — Location of single drillhole, with reference number
- ◉² — Location of closely spaced group of drillholes, with reference number
- (?)² — Drillhole, exact location uncertain, with reference number
- Property with underground drillholes in this general area with reference number
- ○² — Property with drillholes which have not been plotted on map, with reference number
- ⊕² — Reverse circulation drillhole; churn drilling, with reference number